II. IN THE CLAIMS:

This listing of claims replaces without prejudice all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-12 (Cancelled).

13. (Original) A flow monitoring system, comprising:

a first monitoring assembly having at least one sensor, wherein the at least one sensor is operative to detect data representative of actual flow volume of a fluid substance at a first location;

a processor in communication with the first monitoring assembly;

a memory, wherein the memory is operative to store the data representative of actual flow volume and a detection time associated with said data; and

a central computing device in communication with the first monitoring assembly,

wherein the processor is trained to compare the actual flow volume with a predicted flow volume to yield a difference value, the predicted flow volume being dependent upon the data stored in the memory and the detection time associated with said data.

14. (Original) The system of claim 13, wherein the processor is further trained to issue a notification if the difference value exceeds a predetermined variance amount.

15. (Original) The system of claim 13, wherein the data representative of actual flow volume comprises at least one of velocity data and depth data, and wherein the processor is further trained to calculate an actual flow volume corresponding to the at least one of velocity data and depth data.

16. (Original) The system of claim 13, further comprising an alarm device, the alarm device being integral with the processor, and the alarm device being configured to selectively issue an alarm based on the difference value.

17. (Original) The system of claim 16, wherein a current threshold value is computed on the basis of the predicted flow volume and the actual flow volume, the current threshold value being updated periodically, and wherein the alarm device is configured to issue an alarm when the actual flow volume is less than the current threshold value.

18. (Original) The system of claim 17, wherein when an alarm is issued by the alarm device, the first monitoring assembly is configured to communicate the alarm.

19. (Original) The system of claim 18, wherein the first monitoring system is configured to communicate the alarm via at least one of a cellular telephone means, a land line telephone means, a pager, an electronic mail means, and an Internet means.

20. (Original) The system of claim 13, wherein the processor is integral with the first monitoring assembly.

21. (Original) The system of claim 13, wherein the processor is integral with the central computing device.

22. (Original) The system of claim 13, wherein the first monitoring assembly is further operative to detect data representative of flow velocity and depth, and to validate the data representative of flow velocity and depth.

23. (Original) The system of claim 13, further comprising a means for detecting a quantity of rain at a location during a period of time.

24. (Original) The system of claim 23, wherein the means for detecting a quantity of rain includes at least one of a rain gauge, a weather service, and a weather web site.

25. (Original) The system of claim 13, wherein the central computing device is trained to predict at least one of an anticipated flow velocity, an anticipated depth, and an anticipated flow volume of the fluid substance at a second location.

26. (Original) An apparatus for monitoring and analyzing flow of a fluid substance in a sewer system, the apparatus comprising:

a first means for monitoring fluid flow having at least one means for sensing, wherein the at least one means for sensing is operative to detect data representative of actual flow volume at a first location;

a means for processing in communication with the first means for monitoring;

a means for storing data, wherein the means for storing data is operative to store the data representative of actual flow volume and a detection time associated with said data; and

a means for computing in communication with the first means for monitoring,

wherein the means for processing is trained to compare the actual flow volume with a predicted flow volume to yield a difference value, the predicted flow volume being dependent upon the data stored in the means for storing data and the detection time associated with said data.

27. (Original) The apparatus of claim 26, wherein the means for processing is further trained to issue a notification if the difference value exceeds a predetermined variance amount.

28. (Original) The apparatus of claim 26, wherein the data representative of actual flow volume comprises at least one of velocity data and depth data, and wherein the means for processing is further trained to calculate an actual flow volume corresponding to the at least one of velocity data and depth data.

29. (Original) The apparatus of claim 26, further comprising a means for alarming, the means for alarming being integral with the means for processing, and the means for alarming being configured to selectively issue an alarm based on the difference value.

30. (Original) The apparatus of claim 29, wherein the means for processing is further trained to compute a current threshold value on the basis of the predicted flow volume and the actual flow volume and to periodically update the current threshold value, and wherein the means for alarming is configured to issue an alarm when the actual flow volume is less than the current threshold value.

31. (Original) The apparatus of claim 30, wherein when an alarm is issued by the means for alarming, the first means for monitoring is configured to communicate the alarm.

32. (Original) The apparatus of claim 31, wherein the first means for monitoring is configured to communicate the alarm via at least one of a cellular telephone means, a land line telephone means, a pager, an electronic mail means, and an Internet means.

33. (Original) The apparatus of claim 26, wherein the means for processing is integral with the first means for monitoring.

34. (Original) The apparatus of claim 26, wherein the means for processing is integral with the means for computing.

35. (Original) The apparatus of claim 26, wherein the first means for monitoring is further operative to detect data representative of flow velocity and depth, and to validate the data representative of flow velocity and depth.

36. (Original) The apparatus of claim 26, further comprising a means for detecting a quantity of rain at a location during a period of time.

37. (Original) The apparatus of claim 36, wherein the means for detecting a quantity of rain includes at least one of a rain gauge, a weather service, and a weather web site.

38. (Original) The apparatus of claim 26, wherein the mean for computing is trained to predict at least one of an anticipated flow velocity, an anticipated depth, and an anticipated flow volume of the fluid substance at a second location.

Claims 39-47 (Cancelled).